



SIERRA CLUB

MAINE CHAPTER

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To: Committee on Energy, Utilities, and Technology

From: Ania Wright, Legislative & Political Specialist, Sierra Club Maine Chapter

Date: January 23rd, 2024

Re: **Testimony in Support of LD 2077: An Act Regarding Customer Costs and the Environmental and Health Effects of Natural Gas**

Senator Lawrence, Representative Zeigler, and members of the Energy, Utilities, and Technology Committee,

I am testifying on behalf of Sierra Club Maine, representing over 22,000 supporters and members statewide. Founded in 1892, Sierra Club is one of our nation's oldest and largest environmental organizations. We work diligently to amplify the power of our 3.8 million members and supporters nation-wide. We urge you to vote "ought to pass" on LD 2077.

Maine's fracked gas system poses threats to our environment, Maine ratepayers, and public health. In order to address these risks, LD 2077 proposes that the PUC conduct critical studies on stranded assets and indoor air pollution from fossil fuel appliances, while also restructuring financial incentives to ensure profit-seeking utilities bear the cost of system expansion.

Climate change is here. In the last month, Portland saw its highest tide ever recorded, we lost historic landmarks, working waterfronts are now in limbo, and fishermen lost thousands in gear and investments. 2023 was the hottest year on record¹, with global warming hitting 1.48 degrees Celsius, shocking scientists. We are dangerously close to tipping points and the 1.5 degree limit sought by the Paris Agreement. Young Mainers, including myself, are terrified for our futures here in this state.

The science is clear that in order to avert the worst of the climate crisis, we cannot allow for any new expansion of fossil fuels, including so-called "natural" gas. Every step of the way — from fracking, to transport by pipeline, to liquefaction — gas production, transmission, and export projects all release significant amounts of methane, a powerful greenhouse gas contributing to the climate crisis.

Methane is a climate super-pollutant that has more than 80 times the warming power of carbon dioxide over 20 years. Research shows that methane leaks from distribution mains, services, and appliances within the home are systematically undercounted — including by the EPA methodology now used to account for Maine's greenhouse gas emissions.

¹ <https://www.cnn.com/2023/12/06/climate/2023-hottest-year-climate/index.html>

Furthermore, burning gas for cooking and heating creates indoor air pollution linked to asthma in children, exposes people to carcinogens like benzene, and contributes to the formation of ground-level ozone or smog. Poor air quality and the associated impacts are notoriously inequitable. Pre-existing and chronic health conditions exacerbated by air pollution are associated with race, income, and age.

LD 2077 proposes various studies on health, ratepayer, and future impacts, while also limiting future impacts through limiting expansion of the sector. The impetus for LD 2077 is not a new concept. We are seeing 'future of gas' dockets and gas legislation pop up all over the United States. Dockets have been filed or completed in California, Colorado, Massachusetts, Minnesota, Nevada, New Jersey, New York, Oregon, Rhode Island, and Washington. In Massachusetts, a recent ruling declared that their widespread gas system is incompatible with long-term climate targets, laying out required actions for gas utilities. In New York, Governor Hochul has pledged to advance the Affordable Gas Transition Act, legislation supporting responsible, equitable, and effective gas system transition planning.

In the appendix below, further information is provided on the health, climate, and ratepayer risks of our current gas system, alongside information on how other states are tackling the issue. We recognize that this bill could be stronger, and are supportive of amendments to bolster studies on workforce and health impacts. This bill moves us in the right direction to protect ratepayers from stranded assets, and from the health effects of pollution while investigating alternatives for job transitions. The future of gas transition is happening, and Maine utilities are aware and should be planning without false solutions and in ways that protect ratepayers, health, and climate.

Thank you for your time and consideration, and please vote 'ought to pass' on LD 2077.

Sincerely,

Ania Wright
Legislative & Political Specialist
Sierra Club Maine

FUTURE OF GAS ACTIONS ACROSS THE US

Massachusetts: a recent ruling² declared that their widespread gas system is incompatible with long-term climate targets. It laid out the first required actions of many for gas utilities to change, including;

- Business as usual must end - utilities can no longer propose new gas infrastructure as the only solution. Given MA decarbonization goals, utilities must make a solid financial case to approve new gas infrastructure: *"As the Commonwealth strives to achieve its 2050 climate targets, we envision that the long-term use of the natural gas distribution system generally will*

² <https://www.mass.gov/news/department-of-public-utilities-issues-order-20-80>

be limited to strategic circumstances where electrification is not feasible for all natural gas applications.”

- The Department of Public Utilities (DPU) is responsible for mitigating the cost of the transition on ratepayers, particularly on low and moderate-income customers. It is also determined to prioritize new job opportunities in impacted communities and ensure a just transition for existing workers
- Utilities’ existing financial investments aren’t in jeopardy of not being paid back, but utilities must begin developing pilots and plans for decommissioning the system³.

New York:

- Governor Hochul in her ‘state of the state’ address this month, committed to gas transition planning:
“Governor Hochul has taken unprecedented steps to accelerate the transition away from fossil fuels and protect affordability, but outdated provisions of state law have limited the ability of the DPS and utility companies to undertake long-term transition planning for the gas system in a sensible way. Current legal requirements threaten to saddle customers with hundreds of millions of dollars in additional costs for decades to come and limit customers’ ability to take full advantage of new technologies... This year, Governor Hochul will advance the Affordable Gas Transition Act, legislation supporting responsible, equitable, and effective gas system transition planning⁴”

Regulators across the country are slashing or eliminating incentives for connecting new homes to the gas system — a move that incentivizes climate-friendly new construction and saves ratepayers money.

- In April 2022, **Connecticut** ended a ratepayer-funded program aimed at expanding the gas system, citing cost and climate concerns⁵.
- In August 2022, **California** ended subsidies for connecting new homes to the gas system – a move that will save ratepayers \$164 million annually⁶.
- In December of 2022, **Colorado** regulators scaled back subsidies for connecting new homes to the gas system. Including steps to protect ratepayers, including requiring utilities to eliminate gas line extension allowances — expensive subsidies paid by utility ratepayers to developers for new gas line hook-ups⁷.
- Last year, regulators in **Oregon** approved a settlement⁸ in Avista Utilities’ rate case that eliminated subsidies for connecting new homes to the gas system. The decision also included an agreement that Avista begin to look for alternatives to adding new gas

³<https://www.sierraclub.org/massachusetts/blog/2023/12/plain-language-beyond-gas-decision-and-what-it-means-climate-justice>

⁴<https://www.governor.ny.gov/schedule/2024-state-state-address>

⁵<https://www.courant.com/news/connecticut/hc-biz-state-gas-expansion-plan-20220427-bydl6r72cbeypg7p55opef5a-me-story.html>

⁶<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M496/K415/496415627.PDF>

⁷<https://www.cpr.org/2022/12/08/colorado-natural-gas-restrictions-home-construction/>

⁸<https://earthjustice.org/press/2023/oregon-public-utility-commission-approves-settlement-with-avista-to-phase-out-fossil-fuel-subsidies-and-restrict-political-spending>

pipeline systems. Now, anytime Avista considers a new pipeline project over \$1 million, it must also consider non-pipe options⁹.

- Last year, **Washington** significantly reduced gas hookup subsidies¹⁰.

Regulators are also pairing down rate increases, and criticizing gas utilities for lack of restraint in proposed capital investment.

- Last year, **Colorado** regulators slashed a proposed \$188 million rate increase for investments over three years by 70%, and limited the increase to just one year¹¹.
- **Oregon** regulators took aim at gas utility lobbying against local climate policies in a rate case decision last October, slashing a proposed increase for lobbying expenses from NW Natural, the state's largest utility, and calling out the utility for its inappropriate use of ratepayer dollars¹².
- In **Arizona**, Southwest Gas announced last year that it would lower its rate hike in response to months of pushback and criticism from consumer advocates and regulators¹³.

In Washington, D.C., Maryland, Massachusetts, and New York, continued utility gas spending is driving an affordability crisis.

- According to the Building Decarbonization Coalition, in **New York** state alone, gas utility spending has ballooned by \$15 billion in 10 years. If this utility spending continues, monthly gas bills could climb to more than \$8,000 by 2050 as more customers leave the gas system, a trend that will accelerate further after the passage of the All-Electric Buildings Act¹⁴.
- The Gas System Enhancement Plan (GSEP) in **Massachusetts**, approved in 2014, is expected to cost ratepayers \$40 billion¹⁵. The future of gas docket just passed is expected to mitigate some of these costs.
- The cost of ProjectPIPES, Washington Gas' program to repair and replace the **Washington, D.C.**'s aging gas system, has ballooned to more than \$4.5 billion, driving up gas rates for hundreds of thousands of gas customers. DC gas customers are expected to pay back \$27,000 each over the next 40 years to foot the bill for Washington Gas' unchecked spending¹⁶.

⁹<https://oregoncub.org/news/blog/advocates-win-reduced-bill-increase-stronger-environmental-protections-for-avista-customers/2870/>

¹⁰ https://drive.google.com/file/d/1eNERo1NXGyxobR6waHLbmJtX5uLpaGxV/view?usp=share_link

¹¹<https://westernresourceadvocates.org/blog/colorado-puc-approves-pared-down-64-million-xcel-gas-base-rate-increase/>

¹²<https://earthjustice.org/news/press/2022/oregon-regulators-protect-utility-customers-and-climate-in-paring-down-nw-natural-rate-request>

¹³https://tucson.com/news/local/business/southwest-gas-trims-rate-hike-request-amid-pushback/article_7ba1ca62-6502-11ed-a800-dfc3ea0d4ba2.html

¹⁴ <https://buildingdecarb.org/resource/the-future-of-gas-in-nys>

¹⁵ <https://commonwealthmagazine.org/opinion/spending-billions-fixing-gas-system-makes-no-sense/>

¹⁶<https://edocket.dcpsc.org/apis/api/filing/download?attachId=105094&guidFileName=da84104f-469e-4aa6-b2b9-0d76a9fd9f66.pdf>

- At the current trajectory, **Maryland's** three gas utilities are set to spend over \$35 billion in capital investment projects over the next 80 years according to the Office of People's Counsel, more than doubling consumer bills by 2035¹⁷.

HEALTH IMPACTS

Outdoor air quality

- According to a landmark study¹⁸ from Harvard University, exposure outdoor to PM 2.5 pollution from homes and buildings is now responsible for approximately 18,300 early deaths and \$205 billion in health impacts annually¹⁹.
 - Researchers also found that gas emissions from stationary sources (which includes homes and buildings, in addition to factories and power plants) led to more deaths than coal in at least 19 states (CA, CO, CT, DE, ID, IL, KS, LA, MA, MS, NH, NJ, NV, NY, OR, RI, VA, VT, WA) and D.C.²⁰.
- Another study found that buildings are the most deadly source of air pollution in the U.S., linked to a greater number of premature deaths than either power generation or transportation sectors. The study found that astounding 28,200 premature deaths in the U.S. were linked to toxic pollution from buildings in 2018²¹.
- Unlike most other air pollutants, ozone (also known as "smog") is not directly emitted, but instead is formed in the atmosphere. Ozone is formed when NOx and volatile organic compounds (VOCs) react in our atmosphere in the presence of heat. The key to preventing the formation of ozone is to clean up our air and reduce NOx and methane levels in the air. This begins with reducing emissions but can be advanced further by removing methane once it has leaked (e.g., from near sources such as old natural gas pipelines or livestock barns, and from the ambient atmosphere as the National Academy of Sciences is studying now and is expected to report on this year^{22, 23}.
 - NOx pollution causes a range of harms, including inflammation of the airways, cough and wheezing, reduced lung function, and asthma attacks. New research warns that NO2 is likely to be a cause of asthma in children²⁴.
 - Methane is not only a major source of ground-level ozone pollution, which damages human health and plants, it is also a significant contributor to global warming. Moreover, ozone is in itself a so-called short-lived greenhouse gas. Reducing methane emissions would therefore be beneficial for both air quality and climate change²⁵.

¹⁷<https://opc.maryland.gov/Portals/0/Files/Publications/Reports/Report%20on%20GasUtilitySpending%2010-5-22%20Final.pdf?ver=WHc7fhLjCE5powa-6u4i8w%3d%3d>

¹⁸<https://www.hsph.harvard.edu/c-change/news/gas-biomass/>

¹⁹<https://rmi.org/uncovering-the-deadly-toll-of-air-pollution-from-buildings/>

²⁰<https://www.hsph.harvard.edu/c-change/news/gas-biomass/>

²¹<https://www.nature.com/articles/s41586-020-1983-8>

²²<https://www.nationalhogfarmer.com/livestock-management/researchers-invent-new-method-to-remove-methane-from-air>

²³https://www.nationalacademies.org/event/40025_10-2023_atmospheric-methane-removal-needs-challenges-and-opportunities

²⁴<https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/nitrogen-dioxide>

²⁵<https://www.airclim.org/acidnews/cut-methane-reduce-ozone#:~:text=Methane%20is%20not%20only%20a,called%20short%20lived%20greenhouse%20gas.>

Indoor Air Quality

- Cooking with gas for just one hour creates unhealthy levels of NO₂ pollution in 90% of all homes. In fact, homes with gas stoves have 50% to over 400%²⁶ higher NO₂ concentrations than homes with electric stoves.
- Health impacts stemming from elevated NO₂ exposure can include:
 - Aggravated respiratory symptoms and higher susceptibility to lung infections²⁷
 - 42% increased risk of developing asthma symptoms²⁸
 - IQ and learning deficits in children²⁹
 - Increased risk of cardiovascular effects and more susceptibility to allergies³⁰
- Children with growing lungs are especially vulnerable to pollution from gas appliances.
 - Researchers in Australia found that asthma rates in children living with gas stoves are comparable to those of children living with smokers³¹. The researchers attributed 12% of all childhood asthma to pollution from gas stoves³².
- A growing body of research finds gas stoves leak toxic chemicals and carcinogens even while off³³.

CLIMATE IMPACTS OF INDUSTRY ALTERNATIVES

Gas utilities seeking ways to justify the continued use of the gas system amid calls to decarbonize home heating and cooling have turned to a variety of “alternative gasses” such as hydrogen, RNG or biomethane, biogas, and other derivatives.

- Research consistently shows that electrifying buildings – using electric appliances like heat pumps and induction stoves to replace the need for fuel combustion – is the lowest-cost, lowest-risk path to cutting emissions from homes and buildings.
- The two most commonly used gas alternatives are biomethane and hydrogen. However, these alternative fuels face major cost and supply limitations, and raise environmental justice and emissions concerns. The general consensus from building decarbonization experts is they should not be used for buildings, but instead, should be used for hard-to-electrify sectors. The potential supply of FGAs is a small fraction of gas demand. The gas industry’s own research found that after two decades of ramping up supply and production, **FGAs could only replace 13% of the existing demand for fossil gas**³⁴.
- **Note on biogas:** There are a variety of sources of biogas, including derived from landfills, wastewater treatment plants, feedstock, animal manure, crop residues, and organic fraction of MSW.

²⁶ <https://rmi.org/insight/gas-stoves-pollution-health>

²⁷ <https://rmi.org/insight/gas-stoves-pollution-health>

²⁸ <https://rmi.org/insight/gas-stoves-pollution-health>

²⁹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7329770/>

³⁰ <https://www.nature.com/articles/srep38328>

³¹ <https://www.theage.com.au/national/victoria/kids-asthma-risk-from-cooking-with-gas-like-living-with-a-smoker-20210505-p57p11.html>

³² <https://www.theage.com.au/national/victoria/kids-asthma-risk-from-cooking-with-gas-like-living-with-a-smoker-20210505-p57p11.html>

³³ <https://pubs.acs.org/doi/10.1021/acs.est.1c04707>

³⁴ <https://earthjustice.org/feature/report-building-decarbonization>

- Gas that is sourced responsibly, such as from landfills and wastewater treatment plants, does have an important role to play in our energy future—but not in buildings. Because it is in such limited supply, the U.S. should use this precious resource to lower carbon emissions from difficult to decarbonize sectors, like chemical production and high heat industry production.¹

According to a report by PSR³⁵, fossil-fuel derived hydrogen in homes not only pose significant safety and health risks, but is also a false climate solution that will result in more climate pollution.

- Our gas system of pipes is not designed for hydrogen. As a small element, Hydrogen is prone to leakage from pipes, and hydrogen would also cause embrittlement of the existing gas system. Ultimately, there would be a significant increase in the risk of explosions.
 - Researchers estimate that hydrogen can only comprise around 7% of energy content before major safety hazards arise.
- The Sierra Club only supports the use of green hydrogen—hydrogen made through electrolysis that is powered by renewable energy. Even in the case of green hydrogen, other conditions must be met for its use to be a good idea³⁶
- Using hydrogen in homes has the potential to increase health harming pollutants in homes.
 - Methane gas stoves already release NOx - which can increase asthma symptoms, and burning hydrogen also releases NOx, and hydrogen blending in homes has the potential to increase NOx pollution in homes.
 - 99% of hydrogen used today is created by burning fossil fuels like coal and methane, which increases health-harming outdoor air pollution - burdening already vulnerable communities.
- Hydrogen is the smallest and lightest molecule in the universe — and therefore, more prone to leakage than other gasses. Hydrogen leaks are a major concern because hydrogen acts as an indirect greenhouse gas by absorbing the hydroxyl radicals that normally destroy methane in the air and so hydrogen prolongs the life of methane and in effect has a greenhouse gas effect that some estimate is far more potent than CO₂³⁷.
- Blending hydrogen into the existing gas system would lock in methane gas use for decades to come while increasing health and safety risks from the gas system.
 - States and cities will need to eventually phase out gas to meet climate goals. The gas industry is trying to extend its shelf life by claiming that hydrogen is a climate solution - it's not.
 - Adding Hydrogen to the gas system would increase energy costs, require all new home appliances, and pipeline replacements in the existing gas system, pipe by pipe. Hydrogen blending would be costly and dangerous.
- We do not have time for false climate solutions, especially when the most cost-effective path to decarbonize homes is with efficient electric appliances that can run on 100% renewable energy.

³⁵<https://psr.org/resources/hydrogen-pipe-dreams-why-burning-hydrogen-in-buildings-is-bad-for-climate-and-health/>

³⁶<https://www.sierraclub.org/articles/2022/01/hydrogen-future-clean-energy-or-false-solution>

³⁷<https://www.nature.com/articles/s43247-023-00857-8>

- Powering electric appliances with renewable energy directly is far more efficient than converting renewable energy into hydrogen and then piping this hydrogen into homes and buildings for use in home appliances. In fact, Hydrogen-based, low-temperature heating systems consume 500% to 600% more renewable energy than heat pumps.